

WHAT IS CLAIMED IS:

1. A semiconductor device, in which one or more semiconductor chips each having an externally leading electrode are stacked on a stacking base, comprising

an interposer chip on which one or more connection wirings are formed, wherein:

the externally leading electrode provided on at least one of the semiconductor chips is connected to the connection wiring of the interposer chip by wire bonding, and

the external leading electrode, connected to the connection wiring, which is provided on the semiconductor chip, relays the connection wiring so as to be electrically connected to an electrode of a wiring provided on the stacking base or another of the semiconductor chips (2).

2. The semiconductor device as set forth in claim 1, wherein the interposer chip is formed by using a wafer made of the same material and having the same structure as a wafer used in forming the semiconductor chip.

3. The semiconductor device as set forth in claim 1, wherein the interposer chip is formed by using the same device as a device for forming the semiconductor chip.

4. The semiconductor device as set forth in claim 1, wherein the semiconductor chip is covered by a surface protection film so that the externally leading electrode is uncovered.

5. The semiconductor device as set forth in claim 1, wherein at least one of the semiconductor chips is stacked at a position upper than the interposer chip in a stacking direction.

6. The semiconductor device as set forth in claim 5, wherein

said one or more connection wirings provided on the interposer chip include:

one or more first bonding pads electrically connected to external electrodes, provided at a position lower than the interposer chip in the stacking direction, by wire bonding; and

one or more second bonding pads electrically connected to electrodes, provided at a position upper than the interposer chip in the stacking direction, by wire bonding.

7. The semiconductor device as set forth in claim 1,

wherein the interposer chip and the semiconductor chip are stacked on the stacking base or another of the semiconductor chips (2) so as to be disposed side by side.

8. The semiconductor device as set forth in claim 7, wherein

said one or more connection wirings provided on the interposer chip include:

one or more first bonding pads electrically connected to external electrodes, provided at a position lower than the interposer chip in the stacking direction, by wire bonding; and

one or more second bonding pads electrically connected to electrodes, provided at a position upper than the interposer chip in the stacking direction, by wire bonding.

9. The semiconductor device as set forth in claim 6, wherein:

the number of the connection wirings provided on the interposer chip is plural, and

the connection wirings are disposed so as not to cross each other.

10. The semiconductor device as set forth in claim 8,

wherein:

the number of the connection wirings provided on the interposer chip is plural, and

the connection wirings are disposed so as not to cross each other.

11. The semiconductor device as set forth in claim 9, wherein an order in which the first bonding pads are disposed is different from an order in which the second bonding pads connected to the first bonding pads by the connection wirings.

12. The semiconductor device as set forth in claim 10, wherein an order in which the first bonding pads are disposed is different from an order in which the second bonding pads connected to the first bonding pads by the connection wirings.

13. The semiconductor device as set forth in claim 6, wherein the number of the connection wirings provided on the interposer chip is plural, and the connection wirings are disposed in a roundabout manner.

14. The semiconductor device as set forth in claim 8, wherein the number of the connection wirings provided on

the interposer chip is plural, and the connection wirings are disposed in a roundabout manner.

15. The semiconductor device as set forth in claim 6, wherein:

one or more additional bonding pads are provided on the connection wiring of the interposer chip so as to be positioned between the first bonding pad and the second bonding pad, and

two arbitrary bonding pads out of the first bonding pad, the second bonding pad, and the additional bonding pad are connected to external electrodes by wire bonding.

16. The semiconductor device as set forth in claim 8, wherein:

one or more additional bonding pads are provided on the connection wiring of the interposer chip so as to be positioned between the first bonding pad and the second bonding pad, and

two arbitrary bonding pads out of the first bonding pad, the second bonding pad, and the additional bonding pad are connected to external electrodes by wire bonding.

17. The semiconductor device as set forth in claim 15, wherein:

the number of the connection wirings provided on the interposer chip is plural, and

the connection wirings are disposed so as not to cross each other.

18. The semiconductor device as set forth in claim 16, wherein:

the number of the connection wirings provided on the interposer chip is plural, and

the connection wirings are disposed so as not to cross each other.

19. The semiconductor device as set forth in claim 17, wherein at least two orders out of (i) an order in which the first bonding pads are disposed, (ii) an order in which the second bonding pads connected to the first bonding pads by the connection wirings are disposed, and (iii) an order in which the additional bonding pads connected to the second bonding pads by the connection wirings are disposed, are different from each other.

20. The semiconductor device as set forth in claim 18, wherein at least two orders out of (i) an order in which the first bonding pads are disposed, (ii) an order in which the second bonding pads connected to the first bonding

pads by the connection wirings are disposed, and (iii) an order in which the additional bonding pads connected to the second bonding pads by the connection wirings are disposed, are different from each other.